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Phallus roseus, first record from the neotropics

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Abstract — *Phallus roseus* is cited for the first time from the neotropics being found in the semi-arid Brazilian region. Detailed description and illustrations are presented.

Key words — *Phallaceae*, taxonomy, stinkhorn, fungi, Brazil

Introduction

The genus *Phallus* is the most representative of the family *Phallaceae* Corda with 25 species distributed worldwide (Calonge 2005). Eight species have been recorded for the neotropics: *Phallus atrovolvatus* Kreisel & Calonge (Calonge et al. 2005a), *P. galericulatus* (Möller) Kreisel (Rocabado el al. 2007), *P. glutinolens* (Möller) Kuntze (Trierveiler-Pereira et al. 2009), *P. hadriani* Vent. (Calonge et al. 2005b), *P. impudicus* L. (Calonge et al. 2005b), *P. indusiatus* Vent. (Calonge et al. 2005b, Rocabado el al. 2007, Baseia et al. 2006), *P. ravenelii* Berk. & M.A. Curtis (Calonge et al. 2005b), and *P. pygmaeus* Baseia (Baseia et al. 2003). Studies on *Phallus* from Brazil are few, and so far six species have been described from Brazil (Trierveiler-Pereira et al. 2009).

Phallus roseus was originally described from Egypt by Delile in 1813 (Dring 1964). Fischer included the species in the genus *Itajahya* Möller based on morphological characters such as the presence of a calyptra, a flat structure at the apex of the pileus. Later, Kreisel (1996) considered *Itajahya* as a subgenus of *Phallus*, given that it exhibits many common characteristics, such as the shape and configuration of the pileus surface, receptacle consistency, and gleba odor.

Material and methods

Field expeditions were conducted at the Estação Ecológica do Seridó, located at the district of Serra Negra do Norte, Rio Grande do Norte State, (6°33' – 6°37' S and 37°14' – 37°16' W), covering an area of 1,166.38 ha. Collections were made during the rainy period, between February and July 2008. The region presents a semi-arid climate with a xerophytic vegetation known as Caatinga. The annual rainfall is under 1,000 mm, normally with an amount between 250 and 800 mm distributed in a short period of 3–6 months (Velloso et al. 2002). The collection of *Phallus roseus* was photographed and examined in the field. The taxonomic study followed the techniques used by Miller & Miller (1988). Species identification was based on the following literature: Kreisel (1996), Baseia (2003), Calonge (2005), and Baseia et al. (2006). The terminology used followed that proposed by Kirk et al. (2008). Colour standardization was from Kornerup & Wanscher (1978). The spores were examined under a Phillips XL 30 scanning electron microscope (SEM) and a Motic BA200 optical microscope (OM). The collection was deposited in the UFRN herbarium.

Phallus roseus **Delile, Descr. Égypte, Hist. Nat. 2: 300. 1813.** **Fig. 1**

≡ *Itajahya rosea* (Delile) E. Fisch., Ber. Dtsch. Bot. Ges., 47: 294. 1929.

Egg subglobose or pyriform, 3–4 cm high by 2–2.5 cm wide, white to yellowish-brown (5A2), with developed rhizomorph. Basidioma 7–10 cm tall. Receptacle cylindrical, 1–1.5 cm tall and 2–2.5 cm wide, surface smooth. Pseudostipe pink (11A2), with remnants of exoperidium on the surface, spongy, hollow, cylindrical, 3–4.5 cm tall and 1.5–2 cm wide, formed by pseudoparenchymatous cells; calyptra pink (11A2) at the apex. Volva subglobose, with superficial layer constituted by pseudoparenchymatous cells; inner layer formed by hyphae. Gleba mucilaginous, olive (2F4). Spores elliptic, 3.0–3.5 × 1.8–2.0 μm; hyaline; smooth.

Habitat: rocky soil with direct sun exposure.

Material examined: **Brazil. Rio Grande do Norte: Serra Negra do Norte.** Estação Ecológica do Seridó, 06°35'02"S, 37°17'02"W, 202 m high, 23-V-2008, leg. *T. Ottoni*, 535 (UFRN), 800034 (URM).

Distribution: Africa, Southern Yemen, North America, Southern France, Israel, India, and Pakistan (Dring 1964, Mornand 1986, Kreisel 1996, Kreisel & Al-Fatimi 2008).

Taxonomic remarks: The most diagnostic characteristics of *Phallus roseus* are the presence of a calyptra at the apex of the receptacle and a pink pseudostipe. The latter distinguishes *P. roseus* from *P. galericulatus*, which exhibits a white pseudostipe (Dring 1964 & Kreisel 2008). Fischer (1933) suggests that they belong to the same taxa. However, the taxonomic relationship between the two species is not yet well defined (Kreisel, 1996), a situation that calls for additional

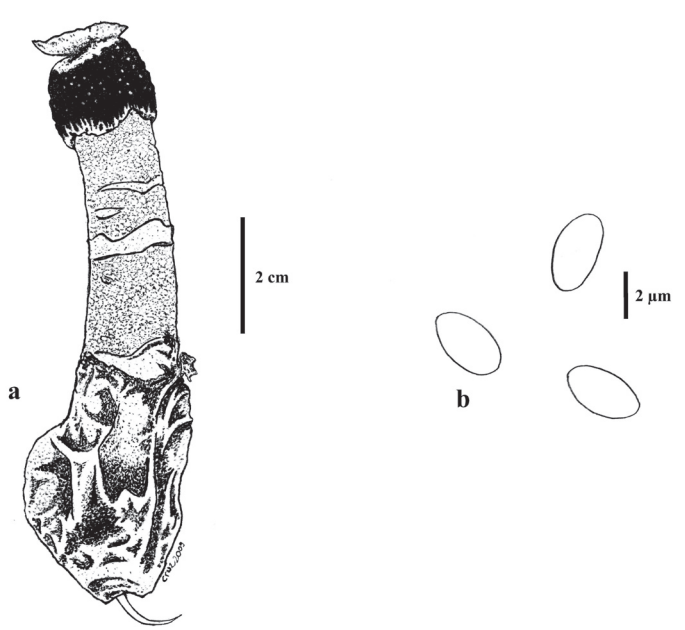

Fig. 1. *Phallus roseus*: a. basidioma; b. basidiospores.

molecular studies on the group. This is the first record of *P. roseus* from the neotropics.

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References

Baseia IG, Gibertoni TB, Maia IC. 2003. *Phallus pygmaeus*, a new minute species from tropical rain forest. Mycotaxon 85: 77–79.

Baseia IG, Maia LC, Calonge FD. 2006. Notes on *Phallales* in the Neotropics. Bol. Soc. Micol. Madrid 30: 87–93.

Calonge FD. 2005. A Tentative key to identify the species of *Phallus*. Bol. Soc. Micol. Madrid 29: 9–17.

Calonge FD, Kreisel H, Mata M. 2005a. *Phallus atrovolvatus*, a new species from Costa Rica. Bol. Soc. Micol. Madrid 29: 5–8.

Calonge FD, Mata M, Carranza J. 2005b. Contribución al catálogo de los gasteromycetes (*Basidiomycotina, Fungi*) de Costa Rica. Anal. del Jard. Bot. Madrid 62: 23–45.

Dring DM. 1964. Gasteromycetes of West Tropical Africa. Mycological Papers 98: 1–60.

Fischer E. 1933. Reihe *Gasteromyceteae.* In Engler A, und Prantl K. (ed.), Die naturlichen Pflanzenfamilien, Band 7. Leipzig. 122pp.

Kirk MP, Cannon PF, Minter DW, Stalpers JA. 2008. Dictionary of the Fungi. 10th ed. CAB Europe. 771 pp.

Kornerup A, Wanscher JE. 1978. Methuen Handbook of Colour, 3th edn. London Methuen. 243 pp.

Kreisel H. 1996. A preliminary survey of the genus *Phallus* sensu lato. Czech Mycol. 48: 273–281.

Kreisel H, Al-Fatimi M. 2008. Further Basidiomycetes from Yemen. Feddes Repertorium 119: 463–483.

Miller OK Jr, Miller HH. 1988. Gasteromycetes: morphology and developmental features. Mad River, Eureka, CA. 157pp.

Mornand J. 1986. Les gastéromycètes de France. II. Documents Mycologiques 17(65): 1–18, 1986.

Rocabado D, Wright JE, Maillard OZ, Muchenik NF. 2007. Catálogo de los gasteromycetes (*Fungi: Basidiomycotina*) de Bolivia. Kempffiana 3: 3–13.

Trierveiler-Pereira LP, Loguercio-Leite C, Calonge FD, Baseia IG. 2009. An emendation of *Phallus glutinolens*. Mycol. Progress 8: 377–380.

Velloso AL, Sampaio EVSB, Pareyn FGC. 2002. Ecorregiões propostas para o Bioma Caatinga. PNE-Associação plantas do Nordeste, Instituto de Conservação Ambiental, Nature Conservancy do Brasil, 76pp.